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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,189	06/30/2003	Menahem Lasser	246/206	8784

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EXAMINER

CHACE, CHRISTIAN

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,189

Applicant(s)

LASSER, MENAHEM

Examiner

Christian P. Chace

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1,3-8 and 10-16 is/are allowed.
6) ☒ Claim(s) 2,9 and 17-27 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 30 June 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/19/03.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: Reasons for Allowable Subject Matter.

DETAILED ACTION

Information Disclosure Statement

IDS submitted 19 August 2003 has been considered by examiner. A signed and initialed copy is attached hereto.

Drawings

Figure s 1A, 1B, and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(b) because they are incomplete. 37 CFR 1.83(b) reads as follows:

When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing

figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The figures are for showing the claimed the invention. In the instant application, one of ordinary skill in the art could not determine the claimed subject matter. For example, in the instant specification at page 15, in lines 7-12, a very useful example is given as to what the invention is. In addition, beginning at page 15 of the instant specification, at line 17, and continuing into page 16 to line 12, offers another very useful example of the claimed invention. These explanations in the instant specification go to showing what a "risk zone" is. Especially given that the term is not a term with an accepted meaning in the state of the art, and a thorough understanding of the term is essential to understanding the claims that include it, it must be depicted in the drawings.

Another example would be for claim 23, which claims a multi-level memory cell. It would be extremely useful to one of ordinary skill in the art to have a graphical explanation of what this is. Indeed, this is why the Code of Federal Regulations, cited *supra*, requires a graphical depiction of *all* claimed subject matter.

Specification

The disclosure is objected to because of the following informalities: At page 10, in line 25, the common housing is referred to, but the number respective to the drawings is not included. The number "15" should be included following the word "housing" in line 25 for consistency.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The term "substantially simultaneously" in claims 2 and 9 is a relative term which renders the claim indefinite. The term "substantially simultaneously" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Examiner notes that the term "simultaneous," by itself, is, indeed, defined by specification to be in one command. However, it is the term "substantially" being associated with it in the claim that is at issue – is it during one command, or not? The answer to this question is impossible to determine, even in light of the specification.

Claim 17 appears to have several antecedent basis issues. For example, the claim recites, "a plurality of pages," in line 2. However, the claim continues to recite, "said pages," "a first said page," and "a second said page." Should "said pages" be "said plurality of pages?" Should "a first said page" be "a first one of said plurality of

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pages?” Should “a second said page” be “a second one of said plurality of pages?” In other words, it is unclear whether “said page” is one of (e.g., subset of) the plurality of pages, or all of the plurality of pages, or an entirely different set of pages out side of the plurality of pages. The same reasoning applies to the first and second claimed pages as well. Also see claims 24 and 25 for similar issues (detailed below with respect to 35 USC 102 rejection).

With respect to claim 19, examiner cannot determine the metes and bounds of “*reversibly* operationally associated,” as examiner has no idea what this means. Even having looked to the specification, it does not appear to be defined anywhere therein, which also precipitates a “lack of enablement,” and a “lack of written description,” rejections under 35 USC 112, 1st paragraph in addition to the instant rejection under 35 USC 112, 2nd paragraph, the rejections of which are hereby incorporated and applied to the instant claim.

With respect to claims 20, 24, and 25, the term “operative to” leaves doubt as to whether the controller actually performs the claimed functions or not – just because ~~is~~ can doesn’t mean that it does.

With respect to claim 26, the claim recites, “computer readable code embodied ON said computer readable storage medium. Examiner notes that this gives rise to interpretation that it is simply written on the flash, in pencil, for example, instead of stored IN the actual cells of the array.

Any and all claims dependent upon the instantly rejected claims are also rejected for at least the same reasons set forth supra, as a dependent claim includes all of the subject matter of the claims upon which it depends.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17-19 and 21-26 are rejected under 35 U.S.C. 102(b) as being anticipated by applicant's admitted prior art (AAPA).

With respect to independent claim 17, in so far as it is clear, a data storage system is disclosed in page 1 of the instant specification, and shown in figures 1A and 1B, for example.

A data storage medium including a plurality of pages is disclosed in page 2, line 17 of the instant specification.

A controller for writing data to said [plurality of] pages in a manner that precludes corruption of old data stored in a first [of] said [plurality of] pages if writing said new data to a second [of] said [plurality of] pages is interrupted is disclosed in page 4, lines 3-20 of the instant specification. The scope of the instant limitation merely requires storing data to a paged memory. The claim language does not require any relationship between the timing or location of the pages written. Accordingly, the prior art systems in

the instant specification discuss writing data to different pages of memory. As applicants also discuss, unless the specific conditions applicant discloses in the AAPA exist, the flash would operate acceptably by writing the pages to different blocks, for example, which would, indeed, preclude the corruption of any data stored in one page that is not included in the risk zone of another page.

With respect to claim 18, the storage medium and the controller being operationally associated within a common housing is disclosed in the specification at page 1, line 27.

With respect to claim 19, the data storage medium and controller being “reversibly operationally associated,” in so far as it is clear, is anticipated at page 1, line 21 of the instant specification.

With respect to claims 21 and 22, the data storage medium being a flash memory is disclosed at page 4, line 8 of the instant specification, for example.

With respect to claim 23, the flash being multi-level cell flash is disclosed at page 5, line 25 into page 7, line 19, where specific conditions discussed supra with respect to claim 17 are set forth, but the interpretation with respect to claim 17 will still work if the flash is a multi-level cell technology for all situations in which the conditions set do not exist – one can still write 2 different pages to two different blocks of an MLC flash, and the second page would not corrupt the first.

With respect to claim 24, the flash memory including a plurality of blocks, such that that each [block of] said [plurality of] blocks includes a respective subplurality of said [plurality of] pages, and wherein said controller writes said new data to said

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respective subplurality of said plurality of pages of each block only sequentially is disclosed in page 5, line 4 of the instant specification.

With respect to claim 25, the flash memory including a plurality of blocks, such that that each [block of] said [plurality of] blocks includes a respective subplurality of said [plurality of] pages, and wherein said controller writes said new data to said respective subplurality of said plurality of pages of each block in a random order is disclosed in page 5, line 7 of the instant specification as being “not amenable to such shortcuts and requiring brute force methods,” which include random order writes.

Allowable Subject Matter

Claims 1, 3-8, and 10-16 are allowed.

Claims 2, 9, 20, and 27 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action (claims 2 and 9) and to include all of the limitations of the base claim and any intervening claims (claims 20 and 27).

The following is a statement of reasons for the indication of allowable subject matter:

With respect to independent claim 1 and dependent claims 20 and 27, a “risk zone” is recited. As noted supra, this is not a term of art with an accepted meaning, which forces examiner to look to the specification for the definition of same in order to determine the metes and bounds of the claims. On page 9 of the instant specification at lines 4-8 as well as at pages 12-13, the term “risk zone” is defined, “...as the set of other pages whose data are placed at risk of corruption when the page is written.” This

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definition in and of itself does not render the claim patentable over the cited prior art of record. Indeed, the adjacent memory cells of Chen et al (US Patent Application Publication 2003/0137888 could be interpreted as "risk zones" due to the field coupling, for example, as disclosed in the title. However, the instant claims also recite, "writing said new data to said at least one unwritten page only if, for each said at least one unwritten page, said risk zone of said each at least one unwritten page lacks written pages." There is no teaching in the cited prior art of record that teaches or suggests this limitation.

The claims upon which the instant claims depend are allowable for at least the reasons set forth supra with respect to same.

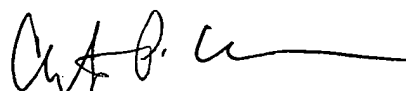
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian P. Chace whose telephone number is 571.272.4190. The examiner can normally be reached on MAXI FLEX.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571.272.4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'C. P. Chace', with a long horizontal flourish extending to the right.

Christian P. Chace
Examiner
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